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IN THE CLAIMS

We Claim:

1. A brass alloy, consisting, by weight, essentially
of:

from 2% to the maximum that maintains an alpha
525 brass microstructure of zinc;

from 0.2% to 2% nickel;

from 0.15% to 1% tin;

from 0.03% to 0.35% phosphorous; and

the balance copper and inevitable impurities.

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2. The brass alloy of claim 1 wherein said nickel
and said phosphorous are present in an amount effective to
provide a nickel:phosphorous weight ratio of between 3.5:1
and 7.5:1.

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3. The brass alloy of claim 2 wherein said nickel
and said phosphorous are present in an amount effective to
provide a nickel:phosphorous weight ratio of about 5:1.

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4. The brass alloy of claim 2 further including
between 0.07% and 0.12% of iron.

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5. The brass alloy of claim 2 further including from
about 2 ppm to about 50 ppm of oxygen, sulfur, carbon or a
mixture thereof.

6. The copper alloy of claim 2 wherein said zinc is
present in an amount of from 8% to 25%.

550 7. The copper alloy of claim 3 wherein said nickel
is present in an amount of from 0.3% to 1%.

8. The copper alloy of claim 7 wherein said tin is
present in an amount of from 0.2% to 0.7%.

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9. The copper alloy of claim 8 wherein said
phosphorous is present in an amount of from 0.05% to 0.18%.

560 10. The copper alloy of claim 6 wherein said tin is
present in an amount of from 0.2% to 0.7%.

565 11. The copper alloy of claim 10 wherein said zinc
content is about 10.2%, said nickel content is about 0.50%,
said tin content is about 0.30% and said phosphorous
content is about 0.10%.

570 12. The copper alloy of claim 10 wherein said zinc
content is about 19.8%, said nickel content is about 0.50%,
said tin content is about 0.51% and said phosphorous
content is about 0.11%.

575 13. An electrical connector having a conductivity in
excess of 25% IACS and a resistance to stress relaxation at
a 125°C operating temperature formed from the alloy of
claim 6.

14. An electrical connector having an electrical conductivity in excess of 25% IACS and a resistance to stress relaxation at a 125°C operating temperature formed
580 from the alloy of claim 8.

15. A process for the manufacture of a copper alloy strip having an electrical conductivity in excess of 20% IACS and resistance to stress relaxation at a 125°C operating temperature, comprising the steps of:
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casting a copper alloy consisting essentially of 8%-25% zinc, 0.3%-1% nickel, 0.2%-0.7% tin, 0.05%-0.18% phosphorous and the balance copper and inevitable impurities;

590 hot rolling said copper alloy to form said copper alloy strip at a temperature in excess of 650°C for a thickness reduction of between 50% and 99%, in thickness;

repeating the sequence of cold rolling followed by annealing multiple times wherein each cold rolling step provides said copper alloy strip with a thickness reduction of between 30% and 95%, in thickness, and each sequential annealing temperature is between 400°C and 600°C;
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cold rolling said copper alloy strip to final strip thickness by a reduction of between 30% and 70%, by
600 thickness; and

relief annealing said copper alloy strip at a temperature of between 200°C and 350°C.

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605 16. The process of claim 15 wherein each successive
one of said sequential annealing temperatures is less than
an immediately preceding one of said sequential annealing
temperatures.

610 17. The process of claim 16 wherein said step of cold
rolling to final thickness includes reducing the thickness
of said copper alloy strip to within the range of 0.005
inch and 0.02 inch.

615 18. The process of claim 17 including the further
step of forming said copper alloy strip at final gauge into
an electrical conductor.

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